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IN THE CLAIMS

1.   (currently amended) A method for analyzing defects on a substrate, the method including the steps of:

        inspecting the substrate to detect the defects,

        identifying the defects by location,

        analyzing the defects to detect extended objects, and

        analyzing sets of the extended objects for an identifiable pattern of repetition across the substrate.

2.   (original) The method of claim 1, wherein the step of inspecting the substrate comprises an optical inspection.

3.   (original) The method of claim 1, wherein the substrate is a monolithic semiconducting substrate having integrated circuitry thereon.

4.   (original) The method of claim 1, wherein the substrate is a reticle.

5.   (original) The method of claim 1, wherein the substrate is a mask.

6.   (original) The method of claim 1, wherein the extended objects include at least one of clusters and signatures.

7.   (original) The method of claim 1, wherein the step of analyzing the defects to detect extended objects includes specifying a bounding box size.

8.   (original) The method of claim 1, wherein the step of analyzing the extended objects for repetition includes specifying a bounding box size.

9.   (original) The method of claim 1, wherein the step of analyzing the extended objects for repetition includes specifying a bounding box orientation.

10.   (original) The method of claim 1, wherein the step of analyzing the extended objects for repetition includes specifying a bounding box overlap.

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11.   (currently amended) A method for analyzing defects on a ~~semiconductor~~ substrate, the method including the steps of:

optically inspecting the substrate to detect the defects,

identifying the defects by location,

5   analyzing the defects to detect extended objects, <u>by</u>

<u>enclosing groups of the defects within bounding boxes with different sizes to determine whether a given group of defects defines a given extended object, even though the size of the bonding box surrounding the given group of defects is different than the size of</u>

10   <u>other bounding boxes surrounding other groups of defects that have also been defined as the given extended object,</u>

<u>enclosing groups of the defects within bounding boxes with different orientations to determine whether a given group of defects defines a given extended object, even though the orientation of the</u>

15   <u>bonding box surrounding the given group of defects is different than the orientation of other bounding boxes surrounding other groups of defects that have also been defined as the given extended object, and</u>

<u>enclosing groups of the defects within bounding boxes with a different</u>

20   <u>degree of overlap to determine whether a given group of defects defines a given extended object, even though the degree of overlap of the bonding box surrounding the given group of defects is different than the degree of overlap of other bounding boxes surrounding other groups of defects that have also been defined as</u>

25   <u>the given extended object,</u> and

analyzing <u>a set of</u> the <u>given</u> extended objects for <u>an identifiable pattern of</u> repetition across the substrate.

12.   (original) The method of claim 11, wherein the extended objects include at least one of clusters and signatures.

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13. (canceled)
14. (canceled)
15. (canceled)
16. (canceled)

17. (currently amended) An apparatus for analyzing defects on a substrate, the apparatus comprising:

a sensor for inspecting the substrate and providing defect information,

a stage for providing relative movement between the sensor and the substrate and providing position information,

an input for receiving at least one of a bounding box size, a bounding box orientation, and a bounding box overlap as adjustable parameters, and

a controller for;

correlating defect information from the sensor and position information from the stage to define defects,

analyzing the correlated defect information and position information to detect extended objects, by

enclosing groups of the defects within bounding boxes with different sizes to determine whether a given group of defects defines a given extended object, even though the size of the bonding box surrounding the given group of defects is different than the size of other bounding boxes surrounding other groups of defects that have also been defined as the given extended object,

enclosing groups of the defects within bounding boxes with different orientations to determine whether a given group of defects defines a given extended object, even though the orientation of the bonding box surrounding the given group of defects is different than the orientation of other bounding boxes surrounding other groups of defects that have also been defined as the given extended object, and

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30   enclosing groups of the defects within bounding boxes with a
      different degree of overlap to determine whether a given
      group of defects defines a given extended object, even
      though the degree of overlap of the bonding box
      surrounding the given group of defects is different than the
      degree of overlap of other bounding boxes surrounding
      other groups of defects that have also been defined as the
      given extended object, and

35   analyzing a set of the given extended objects for an identifiable pattern of
      repetition across the substrate.

18.   (canceled)

19.   (original) The apparatus of claim 17 wherein the substrate is at least one of a
       semiconductor substrate, a reticle, and a mask.

20.   (original) The apparatus of claim 17 wherein the sensor is an optical sensor.